

WHAT IS CLAIMED IS:

- 1 1. A method for identifying or assessing a luminal lesion, said method
2 comprising:
3 introducing a first detectable marker comprising annexin to a body lumen,
4 wherein said annexin localizes at a lesion comprising a material which preferentially binds or
5 incorporates the annexin;
6 introducing a detector into the body lumen; and
7 detecting the detectable marker which has accumulated at the site of the lesion
8 using the detector.
- 1 2. A method as in claim 1, wherein introducing the detectable marker
2 comprises introducing a radioactive marker
- 1 3. A method as in claim 2, wherein introducing the radioactive marker
2 comprises introducing a radioisotope which emits beta (β) radiation.
- 1 4. A method as in any of claims 1 to 3, wherein introducing the detectable
2 marker comprises systemic introduction of the marker.
- 1 5. A method as in any of claims 1 to 3, wherein introducing the detectable
2 marker comprises introducing locally through the detector.
- 1 6. A method as in any of claims 1 to 3, wherein introducing the detectable
2 marker comprises systemic injection into the patient's vasculature.
- 1 7. A method as in claim 1, wherein introducing the detector comprises
2 percutaneous introduction of a catheter into the body lumen, wherein the catheter comprises
3 the detector.
- 1 8. A method as in claim 1, wherein introducing the detector comprises
2 surgically accessing the body lumen to create an access passage and advancing the catheter
3 through the passage into the body lumen, wherein the catheter comprises the detector.
- 1 9. A method as in claim 1, wherein detecting the localized marker
2 comprises detecting marker within 5 mm of a detection surface of the detector.

- 1 10. A method as in claim 1, wherein the marker emits beta (β) radiation
2 and the detector detects beta (β) radiation.
- 1 11. A method as in any of claims 1, 9, and 10, wherein detecting the
2 localized marker comprises scanning a segment of the body lesion having a length of at least
3 3 cm
- 1 12. A method as in claim 11, wherein the scanned length is at least 4 cm.
- 1 13. A method as in claim 11, wherein scanning the segment comprises
2 positioning a detector having a detection surface and scanning while the detector remains
3 stationary in the body lumen.
- 1 14. A method as in claim 11, wherein scanning the segment comprises
2 positioning a detector and repositioning the detector to scan the entire segment.
- 1 15. A method as in any of claims 1, 9, and 10, wherein detecting the
2 localized marker comprises isotropically detecting marker disposed about a periphery of the
3 body lumen.
- 1 16. A method as in claim 1, further comprising:
2 introducing a second detectable marker to the body lumen, wherein said
3 second detectable marker localizes at a lesion comprising a second material which
4 preferentially binds the second detectable marker; and
5 detecting the second detecting marker.
- 1 17. A method as in claim 16, wherein the second detectable marker is
2 detected using the same detector as detected the first detectable marker.
- 1 18. A method as in claim 16, wherein the second detectable marker is
2 detected using a second detector.
- 1 19. A method for assessing the stability of an intravascular lesion, said
2 method comprising:
3 introducing radiolabeled annexin into a blood vessel, wherein the annexin is
4 selectively incorporated into plaque which is at increased risk of rupture;
5 introducing a detector into the blood vessel; and

6 determining to what degree the radiolabeled annexin has been incorporated
7 into a lesion, whereby an assessment of lesion stability may be made.

1 20. A method as in claim 19, wherein introducing the radiolabeled annexin
2 comprises introducing a annexin complex radioisotope which emits beta (β) radiation.

1 21. A method as in either of claims 19 and 20, wherein introducing
2 radiolabeled annexin comprises systemic introduction of the radiolabeled annexin.

1 22. A method as in either of claims 19 and 20, wherein introducing the
2 radiolabeled annexin comprises introducing locally through the detector.

1 23. A method as in either of claims 19 and 20, wherein introducing the
2 radiolabeled annexin comprises systemic injection into the patient's vasculature.

1 24. A method as in claim 19, wherein introducing the detector comprises
2 percutaneous introduction of a catheter into the blood vessel, wherein the catheter comprises
3 the detector.

1 25. A method as in claim 19, wherein introducing the detector comprises
2 surgically accessing the blood vessel to create an access passage and advancing the catheter
3 through the passage into the blood vessel, wherein the catheter comprises the detector.

1 26. A method as in claim 19, wherein determining the degree of
2 incorporation comprises detecting radiolabeled annexin within 5 cm of a detection surface of
3 the detector.

1 27. A method as in claim 26, wherein the radiolabeled substance emits
2 beta (β) radiation and the detector detects beta (β) radiation.

1 28. A method as in any of claims 19, 26, and 27, wherein determining the
2 degree of incorporation comprises scanning a segment of the body lesion having a length of
3 at least 3 cm.

1 29. A method as in claim 28, wherein the scanned length is at least 4 cm.

1 30. A method as in claim 28, wherein scanning the segment comprises
2 positioning a detector having a detection surface and scanning while the detector remains
3 stationary in the body lumen.

1 31. A method as in claim 28, wherein scanning the segment comprises
2 positioning a detector and repositioning the detector to scan the entire segment.

1 32. A method as in any of claims 19, 26, and 27, wherein determining the
2 degree of incorporation comprises isotropically detecting marker disposed about a periphery
3 of the body lumen.

1 33. A method as in claim 19, further comprising:
2 introducing a second radiolabeled substance to the blood vessel, wherein said
3 second radiolabeled substance localizes at a lesion comprising a second material which
4 preferentially binds the lesion; and
5 detecting the second radiolabeled substance.

1 34. A method as in claim 33, wherein the second radiolabeled substance is
2 detected using the same detector as detected the first radiolabeled substance

1 35. A method as in claim 33, wherein the second radiolabeled substance is
2 detected using a second detector.

1 36. A kit comprising:
2 a radiation detector configured to be introduced into a body lumen; and
3 instructions for use according to either of claims 1 and 19

1 37. A kit comprising:
2 a radiation detector configured to be introduced into a body lumen;
3 a container holding labeled annexin capable of binding to a target within the
4 body lumen; and
5 a package for holding the radiation detector and the container.